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NRO REVIEW COMPLETED

11 August 1960

MEMORANDUM FOR : Deputy Chief, Development Branch, DFB-DB/P
SUBJECT : Trip Report - [REDACTED]

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1. A design review meeting of the C-61 program was held at Itak on 10 August 1960. The Configuration Control Board and [REDACTED] were in attendance, as well as representatives from LSC, Itak and Fairchild.

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2. DISCUSSION:

A. Test On The Main Plate - Vibration tests to date on several varieties of several structures for the main plate of the C-61 program were inconclusive, but enough data was available to arrive at a decision. A 1 1/8 inch main plate with 1/8 inch cells (honeycomb) and .030 inch skin will be used. As of noon yesterday, test of a plate of this type had completed the majority of the vibration tests successfully. In order to ensure success of the final item, a star shaped insert will be utilized in conjunction with this plate in lieu of the round center core presently designed. All present concurred that this approach should solve the problem. However, it will be fabricated and tested before the next meeting in order to verify this fact. In this regard, it is also directed that a conical diaphragm structure of .030 inch and/or .020 inch skin thickness will be tested in conjunction with the above main plate as a backup item. In this manner, we can be assured that the tie rod will be eliminated.

B. V/H Transducer and Shuttle Life Tests - A new V/H transducer test has been completed successfully. This transducer operated continuously for 11 days or for approximately 190,000 cycles. A shuttle test rig was operated for 500,000 cycles before the motor burned out. As an added note of interest, the polyester film being utilized in this test was still going strong when the motor failed.

C. Supply Pack Replacement - An existing torque motor on the instrument, which had been utilized for a breaking action only for the supply spool, has been tied in through a transistor for operation as

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a torquer element to provide the tension previously supplied by the pack drag unit. This new torquer unit was tested on instrument 18 for a 4 day run. Calibration through the dancer roller shows that tension throughout the entire operation varied from 1.4 pounds to 1.9 pounds. This variance is considered satisfactory. A radius sensing unit was used to obtain these senses through the torque motor. This product improvement, while directed toward the C-61 program, can be retrofitted to "C" prime instruments. LMSD will submit an engineering order (S.O. 60-6) to the CCS for consideration as a retrofit. I feel that the Board all concurs in this modification. We would like an opportunity to review the costs.

2. Fecker Lens For The C-61 - During the original discussions of the C-61 program, a proposal was made to purchase and test one Fecker lens as a possible replacement for the Hyac II B. Apparently, this proposal was made primarily on a cost savings basis rather than one of an actual product improvement nature and some confusion was apparent between the original cost of [] per unit for the production item and [] figure for one prototype. It was also brought up that the Hyac II B lens is currently costing around [] per unit and the long lead items of glass had already been purchased for the C-61 program. LMSD has a message to answer on this subject, which we will monitor from Headquarters; however, I feel sure that they will say no to the Fecker lens.

3. The next meeting of these organizations, including the CCS, will be held in New York on or about 7 September and will cover the following tentative agenda:

- a. Recap of the work statement.
- b. Hub drive for the take-up spool.
- c. The tension serving servo.
- d. Overrunning clutch.
- e. The "A" digital clock.
- f. Instrument weight.
- g. VAI program.

4. GENERAL:

I feel that the meeting went very well and that the major problem before the group (main plate) was resolved satisfactorily. The stature of the CCS is now thoroughly understood by all parties concerned and accepted. I think it is also relevant to state that [] was welcomed as a consultant by all concerned and I could not detect any resentment at his being present.

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WFO/DB [redacted] (11 AUG 60)

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